REMARKS

The Examiner has rejected claims 8, 11, 20, 22 and 24-47 pending in the present application. Applicant respectfully requests reconsideration and allowance of the pending claims for the reasons stated below.

A.   Rejection of Claims 8, 11, 20, 22 and 24-47 Under 35 USC §103(a)

The Examiner has rejected claims 8, 11, 20, 22 and 24-47 under 35 USC §103(a) as being unpatentable over Gersho, et al. (USPN 6,233,550) (hereinafter "Gersho '550") in view of Ertem, et al. (USPN 6,453,289) (hereinafter "Ertem '289"). For the reasons that follow, applicant respectfully disagrees and kindly submits that the present invention, as defined by independent claims 8, 20, 32 and 40, is patentably distinguishable over the cited references of record, considered either solely or in combination.

Independent claim 8 specifies a method for classifying a speech signal comprising, among other things, "extracting a parameter from the speech signal; estimating a noise component of the parameter; removing the noise component from the parameter to generate a noise-free parameter; comparing the noise-free parameter with a pre-determined threshold." As explained in the present application, this particular technique provides significantly improved robust classification in speech coding without the complexity and the power and memory consumption suffered by conventional approaches. See, for example, page 8, line 19 to page 9, line 6 of the present application.

In contrast, neither Gersho '550 nor Ertem '289 disclose or remotely suggest the technique specified by claim 8. For example, the Examiner acknowledges that Gersho

2

'550 fails to disclose "estimating a noise parameter and removing the noise component from the parameter to generate a noise-free parameter" as specified by claim 8. Additionally, applicant points out that Gersho '550 also fails to disclose or suggest "comparing the noise-free parameter with a pre-determined threshold" as specified by claim 8, since Gersho '550 neither discloses nor suggest operating on "noise-free" speech parameters in the manner specified by claim 8.

The Examiner, however, cites Ertem '289, stating that the "noise reduction algorithm" implemented in a pre-compression mode, as disclosed in Ertem '289, corresponds to "estimating a noise parameter and removing the noise component from the noise parameter to generate a noise-free parameter" as specified by claim 8, and further that the combined references disclose the method specified by claim 8. Applicant respectfully disagrees.

By way of clarification, applicant notes that the present application explains significant drawbacks in prior art implementations of speech classification. For example, a first category of conventional speech classification systems employing varying thresholds suffers from significantly increased complexity (see, for example, page 2, lines 15-23 of the present application); and a second category of conventional speech classification systems that apply noise reduction to noise-contaminated signal before performing noise compression suffers from significantly increased complexity and high power and memory consumption (see, for example, page 3, lines 5-9 of the present application). In contrast, the present invention, as specified by claim 8, provides speech

3

classification systems and methods without requiring the application of complex variable thresholds or pre-processing involving noise reduction.

As noted by the Examiner, Ertem '289 is directed to a "noise reduction algorithm" implemented in a pre-compression mode, and, as such, falls into the second category of conventional systems. For example, with reference to Figures 1 and 3 of Ertem '289, "Noise Reduction" block 20 is carried out prior to "Encoder" block 22 in Figure 1 of Ertem '289 and prior to "Encoder" block 36 in Figure 3 of Ertem '289. As such, Ertem '289 specifically distinguishes between noise reduction and the compression or coding portion, and thus, in pre-compression mode, Ertem '289 carries out noise reduction prior to encoding or compression. In sum, Ertem '289 is simply directed to noise reduction, not speech classification. Thus, combining the disclosures of Ertem '289 and Gersho '550 results in employing the noise reduction technique of Ertem '289 prior to the speech coding technique disclosed in Gersho '550. As explained above, such an approach is a significant departure from the method specified by claim 8, and results in significantly increased complexity and high power and memory consumption.

Moreover, applicant notes that Ertem '289 discloses a voice activity detection scheme employing threshold adaptation (see, for example, block 44 of Figure 5 in Ertem '289). As noted above, such an approach results in significantly increased complexity and is a significant departure from the method specified by claim 8. For these reasons, applicant respectfully submits that the combined disclosures of Gersho '550 and Ertem '289 fail to disclose, teach or suggest the method specified by claim 8, and as such
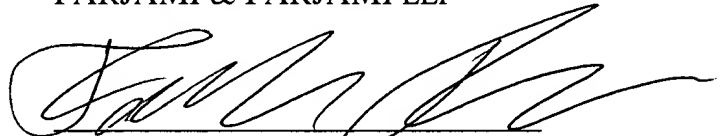
4

independent claim 8, and its corresponding dependent claims 11 and 24-29, are patentably

distinguishable over Gersho '550 and Ertem '289. Accordingly, claims 8, 11 and 24-29

should now be allowed.

Independent claims 20, 32 and 40 have been rejected for reasons similar to those

given for rejection of claim 8. Claims 20, 32 and 40 specify limitations similar to those

specified by independent claim 8, i.e., generating and operating on a "noise-free"

parameter. Applicant respectfully submits that independent claims 20, 32 and 40, and

their corresponding dependent claims 30, 31, 33-39, and 41-47, are patentably

distinguishable over Gersho '550 and Ertem '289 for at least the same reasons that claim

8 is distinguishable over Gersho '550 and Ertem '289. Accordingly, claims 20 and 30-47

should also now be allowed.

B.   Conclusion

For all the foregoing reasons, an early allowance of claims 8, 11, 20, 22 and 24-47

pending in the present application are respectfully requested.

Respectfully Submitted;
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